

Original Communication

No cash no whiplash?: Influence of the legal system on the incidence of whiplash injury[☆]

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Abstract

Whiplash injury has been a continuous source of controversy due to its association with litigation. We studied the incidence of whiplash associated disorder (WAD) in two similar socioeconomic areas and carried out a retrospective study based on the hypothesis that the Spanish law 30/1995 might have an effect on the incidence and duration of cervical symptoms and the persistence of impairment. More than 10,000 patients injured in traffic accidents were studied over a period three years. Of these, only patients with an initial diagnosis of whiplash injury were included in the study. Patients with other injuries were excluded. The patients were classified into two groups: Galicia-Spain and North-Central Portugal (depending on where the accident took place and the medico-legal evaluation procedure in force). Statistical analysis was made using SPSS 13.0 and Statistix 8.0. We found a statistically significant difference between Spain and Portugal in the incidence of WAD and in the duration of symptoms. The incongruities caused by the compulsory application of Spanish law arise from the fact that evaluation on a points scale of impairment does not always reflect the functional state of the injured person.

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1. Introduction

In countries of Roman or French influence the assessment of bodily damage in civil law and the juridical implications form one of the main working areas of the forensic medicine specialist.¹ Whiplash injuries, where the diagnosis is largely subjective and the ideal treatment controversial,

have provided a continuous source of controversy due to their association with compensatory litigation claims secondary to motor vehicle accidents.^{2–7} We have studied the incidence of whiplash associated disorder (WAD) in two similar socioeconomic areas, Galicia-Spain (G-Spain) and North-Central Portugal (NC-Portugal). Both share very similar road traffic and medical care conditions but are located in different countries and subjected to different legal systems. In Spain, Civil Law requires the compulsory use of a bodily damage protocol to assess impairment following a traffic accident, whereas in Portugal no such mandatory legislation exists and to cover this contingency and

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it is standard practice to refer to a Portuguese occupational injury Labor Law scale “La Tabela Nacional de Incapacidades por Accidentes de Trabalho e Doenças Profissionais”, or, more frequently, the French scale “Le Concourse Medical”. Our retrospective study on WAD is based on the hypothesis that the Spanish law 30/1995 might, by reason of the possibility of awarding damages, have an affect on the incidence and duration of cervical symptoms and the persistence of impairment.

2. Material and methods

Over a three-year period from 2000 to 2002 inclusive, we studied 10,608 patients injured in traffic accidents in the areas within the mandates of the Institute of Legal Medicine of the University of Santiago de Compostela, (G-Spain) and the National Institute of Legal Medicine, Coimbra and Porto delegations, (NC-Portugal).

This enabled us to take into account those accidents in which the judicial and compensatory processes had concluded. Only patients with an initial diagnosis of whiplash injury were included, and patients with other injuries were excluded in order to avoid attributing to WAD the recovery time and symptoms resulting from other concurrent lesions such as fractures or dislocations of the cervical spine, head trauma or pre-existing neurological disorders. The age, sex, initial diagnosis for both groups (G-Spain, NC-Portugal) and treatment were recorded as well as the lapse of time from the accident to recovery or stabilization.

Moreover a selection of 135 patients from G-Spain, with an initial diagnosis of whiplash injury resulting from a similar traffic accident (rear-end, low speed impact collision with ΔV near 0), were studied. These patients were classified as liable or non-labile according to whether they were awarded damages as a direct result of the accident. The object of this selection was to establish the duration of cervical symptoms, the use of a surgical collar, treatment with medication, the period of rehabilitation and other symptoms. The period of duration of symptoms was measured up to the disappearance of any WAD from the medical records or to the diagnosis of chronic whiplash.

Statistical analysis was made using SPSS 13.0 and Statistix 8.0 (*t*-student, Mann–Whitney test, regression line).

3. Results

We studied 8796 patients from NC-Portugal and 1812 from G-Spain. Of these, 162 in G-Spain were patients initially diagnosed with WAD as the sole pathology, whereas in NC-Portugal the corresponding number was only 35. We found a statistically significant difference between Spain and Portugal in the incidence of WAD, which was much greater in Spain (odds ratio: 24.57). Although the mean age differs between the groups (32.17 in G-Spain and 42.6 for NC-Portugal) no significant relationship between age and recovery time was observed ($p = 0.20$). Distribution by sex revealed no significant difference

Table 1
Summary of differences between Portugal and Spain groups

	Patients injured	WAD/others injuries	Recovery time/stabilization
G-Spain	1812	162/1650	92.52
NC-Portugal	8796	35/8761	72.49
		Odds ratio 24.576	$p = 0.004$

Table 2
Summary of differences between liable and non-labile groups

	Patients injured	Recovery time/stabilization
Total	135	74.2
Liable	50	43.7
Non-labile	85	92.1
		$p = 0.04$

between the two groups ($p = 0.92$), but there were significant differences by sex for the average recovery time taken, with a figure of 95.34 days for females and 75.43 days for males ($p = 0.02$). There was also a statistically significant between group difference for average recovery time/stabilization, which was greater in G-Spain with an average recovery time of 92.52 days, compared to 72.49 days in NC-Portugal ($p = 0.004$). The differences between groups are summarized in Table 1.

The use of different scales to measure the same impairment renders it very difficult to make a comparison between the two groups, but it can be affirmed that there was no significant within group difference regarding measurement of impairment by sex for both groups ($p = 0.64$).

The rear-end, low speed, impact collision group for G-Spain consisted of 50 liable (drivers) and 85 non-labile (42 drivers and 43 occupants). Of the 135 patients, 65 were male and 70 female, with a mean age of 31. The average time taken for the symptoms to disappear was 74.2 days, with a figure of 43.7 for the liable and 92.1 for the non-labile group. Regarding treatment, 80 cases required a surgical collar, 79 needed physiotherapy and approximately half required analgesic medication. There is a statistically significant relationship ($p = 0.04$) between a longer period of WAD symptoms and non-liability for the accident. We found no statistically significant relationship between the use of a surgical collar, physiotherapy, analgesic medication and duration of symptoms. Differences between groups are summarized in Table 2.

4. Discussion

A significant difference in the recovery time between sexes was noted in both groups and is similar to that reported by Pearce⁸ and Evans.⁹

Despite the socio-economic and road traffic similarities, there is a much greater incidence of WAD in Galicia than in North-Central Portugal. The odds ratio we found is impressive (24.57), and is particularly noticeable in the much longer period of recovery time taken in Spain. In

addition, for group G-Spain, in cases with an identical initial diagnosis of WAD in low speed impact collision there is a statistically significant relationship between a longer period of whiplash injury symptoms and non-liability for the accident (and therefore the award of a greater amount of legal damages).

All these differences can only be explained by the fact that Spanish legislation allows the direct conversion of symptoms (easily simulated) into a legal points system, with the result that the amount of economic compensation is much greater than in Portugal. It also permits monetary compensation to be received during sick leave, even when the patient is already receiving sickness benefit from the employer or insurance company. The incongruities caused by the compulsory application of Spanish law arise from the fact that evaluation on a points scale of impairment does not always reflect the functional state of the injured person. This is aggravated by its disassociation from clinical medicine and fundamentally by the lack of biomechanical analysis.^{2,4} Situations such as this require the introduction of a European protocol used in conjunction with an appropriate bio-mechanical study and routine reference scales to harmonize compensation. Some steps in this direction have already been taken with the coming into force of the medical assessment scale for psychological and bodily damage of civil servants in European institutions, which sets a limit to non-objective compensation.¹⁰ In some other European countries there is a very low rate of expectation of any sequelae from this injury which helps explain the low prevalence of the whiplash syndrome in

such areas.¹¹ Once the European Protocol is implemented, further studies in whiplash syndrome are needed in order to harmonize the medico-legal response in different countries.

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